

EXPLANATION OF PLATE II.—Structure and development of *Entomophthora Phytonomi*: Fig. 1, the position of larva of *Phytonomus punctatus* at tip of a blade of grass when sick with *Entomophthora*. $\times 5$. Fig. 2, spores examined in water from a dry specimen gathered nearly six months before. $\times 430$. Fig. 3, spores a few hours after maturity. $\times 430$. Fig. 4, successive stages of germination of spores sown in water on a glass slide. $\times 430$. Fig. 5, thin transverse section of larva showing the body cavity uniformly filled with mycelium, a peripheral border of hymenium and the alimentary tract at center empty except a little undigested food. $\times 5$. Fig. 6, two hyphæ at an early stage in the development of the conidiophores. $\times 430$. Fig. 7, a coil of hyphæ from the pubescence on larvæ in damp atmosphere. $\times 250$. Fig. 8, *A*, hyphæ bearing four conidiophores, *a b c d*, successive stages in the formation of a spore. $\times 430$. Fig. 9, mycelium from among the muscles at an early stage of the disease. $\times 150$. Fig. 10, swollen ends of hyphæ, filled with granular protoplasm and without vacuoles. $\times 430$. Fig. 11, hymenium *c*, and subjacent mycelium *h*; the spores have all been detached, *s* single mature spore; drawn from an alcohol specimen. $\times 430$.

BRIEFER ARTICLES.

Anemone nudicaulis, n. sp.—I wish to direct the attention of any of our botanists, who may next summer be visiting Lake Superior, to a singular *Anemone* which grows in bogs and on banks near the water at Sand Bay, Minnesota, very near lat. 48° , and in or near the Canadian boundary. All I know of it is from a specimen sent to me in a letter, dated August 8, 1870, from Mr. Joseph C. Jones, then of the U. S. Steamer *Search*. He wrote that the plant was found growing in mossy ground, close to the water's edge, and also in the bogs, and that it grows in the manner of *Coptis trifolia*. I believe it has filiform root stocks, like those of *Anemone Richardsoni*, and the radical leaves are so like those of that species that I inadvertently mistook the plant for that species. But the involucre consists of a single petiolate leaf, very like the radical, or else is wholly wanting. And the akenes are tipped with rather short and hooked styles, very unlike the long ones of the aforesaid Arctic species. A flowering specimen is a desideratum.—ASA GRAY.

Dispersion of some tree seeds.—About twenty-five rods to the northwest of my foot-path on the lawn, there are two large white birch trees, still holding fruit of the last summer. Along the depressions of foot-steps and the mark of an occasional sleigh in the snow may be seen large numbers of birch seeds, looking as though some one had scattered bran on the snow. Most likely many other seeds went further, as there was fair sailing beyond.

For some years past I have often observed the distribution of the winged fruits of the tulip-tree, of which there are several on our lawns. In autumn part of the fruits drop off, falling near the tree, but even in the grass and weeds every wind tosses them a little further on. Before snow came this year there were certainly many of them ten rods from the nearest bearing tree. When the snow comes others are torn from the trees and may often be seen for a quarter of a mile going before the wind on the snow, which may be only very

slightly packed. I have known persons who stoutly maintained, from experiments made, that the wings of the fruit of the tulip-tree amounted to little, because they did not carry the fruit through the air like a miniature balloon.

The nuts of the basswood have also frequently been seen drifting on the snow before the wind, aided by the decurrent bract which is attached in such a way that the fruit cluster is not likely to remain flat on the snow or on the ground.

Numerous other examples could be cited, but we shall leave the rest of them for some of the sharp students who are studying botany in winter.—W. J. BEAL, *Agricultural College, Mich.*

EDITORIAL.

WITH THIS INITIAL NUMBER of a new decade before us, it is impossible not to think of the change since a single naked sheet made its appearance a little more than ten years ago and announced its desire to become the organ of botanists. It was projected by one whose determination to make it succeed was unfailing, and so through troubles of all kinds the GAZETTE made its way. Desirable articles came in slowly, subscriptions still more slowly, and advertisements not at all, the constant financial loss being set over against a constantly increasing experience. At last botanists thought the struggle had been long enough to show vitality, and articles and subscriptions began to come in more rapidly, until the GAZETTE has entered upon its second decade with the hearty good will and substantial support of American botanists. The numerous letters of warm congratulation attest the fact of the very strong place the GAZETTE has made for itself, and it hardly needs to be said that its editors will spare no labor in trying to make it still more indispensable. In these days of numerous ephemeral periodicals it is both a strange and a creditable thing that the GAZETTE has survived, and it helps to emphasize the fact of the growing interest and vigor in botanical studies. The history of this journal can be taken as an index of botanical activity, and this country is to be congratulated that its botanists are so thoroughly aroused and energetic that the GAZETTE can enter upon its second decade with such enlarged space and aspirations. There can be no doubt but that the coming decade will witness unusual botanical activity in this country, many young men, strong, well-trained, and well-equipped, having entered the field. The GAZETTE proposes to stimulate, to assist, to record this activity, and no honest worker need fear that his work will be lost. And so this journal, strengthened by the struggles and successes of ten years, faces its second decade with the marks of undoubted success, and as it deserves, so will it expect the hearty support of every American botanist.

A LITTLE REFLECTION will show that the recent sale in New York city of orchids belonging to the Morgan estate, at which single plants brought from one to nine hundred dollars each, has some relation to the progress of botanical science. In this age any science is stimulated into increased activity by its objects becoming of commercial value. In the domain of electrical and me-